

RECEIVED
CENTRAL FAX CENTER

MAY 30 2007

Remarks

This paper is responsive to the Office Action mailed November 30, 2006. Claims 1-2, 6-21, and 24-27 remain in the application. Claims 1, 2, 6, 21, and 24 are presently amended. Support for the amendments is throughout the application. No new matter has been added. For the reasons set forth below, Applicant respectfully submits that Claims 1-2, 6-21 and 24-27 are now in condition for allowance.

In paragraph 2 of the Action, claim 24 was objected to as depending from canceled claim 23. Claim 24 has now been amended to depend from claim 21. There now is no proper basis for the objection and that objection should be reconsidered and withdrawn.

In paragraph 6 of the Action, claims 1, 2, 6-21, and 24-27 were rejected under 35 USC §112, second paragraph, as being indefinite. Claims 1, 2, 6 and 21 have been amended to more clearly claim the invention. In view of those amendments, there now is no proper basis for the §112, second paragraph rejection. That rejection should now be reconsidered and withdrawn.

In paragraph 4 of the Action, claims 1, 2, 6-21 and 24-27 have been rejected under 35 USC §112, first paragraph, as failing to meet the enabling requirement. Issue is taken with that position.

The basis of the invention is the recognition that a new, highly effective and sensitive sensor can be constructed using two technologies which have not previously joined together, producing surprising and effective results. The two technologies are (i) use of conjugated polymer molecules at the input of a sensor whereby interaction of a material-of-interest with a conjugated polymer molecule, in the presence of an excitation light, produces a highly amplified fluorescence response (for example, as described by the cited Chen reference in 1999), and (ii) use of photon band gap structures as selective narrow band optical channels to convey photons (such as might be produced by the fluorescence of item (i)) to a detector.

Both technologies of (i) and (ii) were known prior to the filing of the subject application. However, there is no prior art which teaches or suggests that the two technologies can be combined to obtain a highly selective and sensitive detector is claimed. Further, there of course

is no teaching or suggestion that such a combination would work, or that the claimed limitations could be made, such as the limitation that the wavelength of the excitation light is outside the photonic band gap, while the wavelength of the fluorescence is within the photonic band gap, resulting in a highly sensitive detector characteristic with a high level of rejection of out-of-band noise, all as claimed in independent claims 1 and 21. Those limitations define how the two technologies have to be specifically tailored in order that they might be combined to form the fluorescence detection system of the invention. The two technologies are not "merely combined," but rather are tailored/modified to behave so that the resulting combinations perform the detection, particularly regarding the wavelength limitations.

While the examiner has based the rejection, in part, on the lack of identification of "specific substances," "specific molecules," and "specific combinations of predetermined materials," it is submitted that these identifications are not necessary, as the invention is the modified combination of two known technologies, wherein persons of skill in the art would readily know which specific substances, molecular and combinations would work. Many such materials are identified in the cited Chen reference.

For all of these reasons, it is submitted that there is no proper basis for the §112, first paragraph rejection of independent claims 1 and 21 and all claims dependent thereon. That rejection should be reconsidered and withdrawn.

Conclusion

Based on the foregoing, the Applicants assert that Claims 1-2, 6-21 and 24-27 are now in condition for allowance. If the examiner believes that a telephone conference with the Applicants' attorney would further the prosecution of the application, he is invited to telephone the undersigned at the number listed below.

A Request for Three-Month Extension of Time is filed concurrently.

A credit card payment form in the amount of \$510.00 to cover the Request for Three-Month Extension of Time is enclosed.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

The Commissioner is further authorized to charge any additional fees which may be required, or credit any overpayment, to Deposit Account No. 19-0741.

Respectfully submitted,
Foley & Lardner LLP
Customer No. 48329

Date: May 30, 2007



Mark G. Lappin, Reg. No. 26,618
Attorneys for Applicants

111 Huntington Avenue
Boston, MA 02199-7610
Telephone: (617) 342-4000
Facsimile: (617) 342-4001